Reference

N01/38 Expansion of Zurich northern bypass, lot 3 Repair of Gubrist tunnel 1st and 2nd tubes









SHORT DESCRIPTION

Repair of the 1st and 2nd tubes of the Gubrist Tunnel with removal of the carriageway and verges, as well as new construction of a service duct and lowered carriageway.

THE PROJECT

The "N01/38 extension of the Zurich northern bypass" (ANU) project comprises the N01 national road between the Limmattal junction (excl.) and the Zurich-North junction (excl.), including the SABA Limmat, Grütwisen and Birchstrasse.

The Federal Roads Office (FEDRO) awarded the contract for the third lot of this renovation to the GUBRI consortium consisting of the partners Implenia (40%, lead management), Walo Bertschinger (30%) and Anliker (30%).

The total construction volume amounts to CHF 178 million.

Lot 3 includes the main CONSTRUCTION work for the repair of the 1st and 2nd tubes of the Gubrist Tunnel:

- Demolition of the existing carriageway slab / verges (first tube 3,270 m, 2nd tube 3,285 m)
- New construction of service duct (WELK), new verges and roadway in lowered position (1st tube 3,090 m, 2nd tube 3,100 m)

Further information on the ASTRA project

SERVICES IN DETAIL

- Demolition of the existing carriageway slab / verges (1st tube 3,270 m, 2nd tube 3,285 m),
- Construction of new service duct (WELK), new verges and roadway in lowered position (1st tube 3,090 m, 2nd tube 3,100 m)
- Construction of the WELK using the cut-and-cover method in the Weinigen surface mining area (1st tube 180 m, 2nd tube 180 m)
- Replacement of the roadway slab in the Weinigen and Regensdorf portal station (1st tube 85 m, 2nd tube 85 m),
- Cable ascents from WELK into the driving area and exhaust air duct (1st tube 12,150 m, 2nd tube: 13,450 m)
- Extinguishing water pipe in WELK with outlets to hydrant niches, in cross-connections (QV) and control centers (1st tube approx. 3,225 m, 2nd tube approx. 3,230 m)
- Reconstruction and new construction of intermediate ceiling (1st tube 3,020 m, 2nd tube 3,005 m)
- Construction of 22 new SOS niches in the 2nd tube, adaptation of the existing SOS niches in the 1st tube
- Adjustments in the QV due to the newly lowered carriageway (12 QV each between 1st/2nd and 2nd/3rd tube)
- Concrete repairs to tunnel walls (approx. 127,000^{m2})
- Renewal of surface protection system (approx. 58,000^{m2})
- Affoltern anti-circulation wall between 2nd and 3rd tubes (L = 55 m)
- Route adjustment incl. service lines in the Affoltern pre-portal area
- New installation and replacement of doors and gates

CHALLENGES

- The 2nd tube is located in the middle between the 1st and 3rd tubes: Difficult access to the respective "middle" portal only via logistics bridges
- Escape route for road users in the 1st and 3rd tubes through the construction site, cross-connections must always be accessible
- Overpressure ventilation system in the 2nd tube in the event of incidents in the tunnel tubes under traffic
- Access to the tunnel is possible via the two portals, but the passage is not continuous due to demolition work
- Coordination of the individual sections (one lane), logistics and material handling inside and outside the tunnel (2-shift operation 06 - 22 hrs)

FACTS

Location	Gubristtunnel , Weiningen , Switzerland
Status	Under construction
Construction volume (value of our services)	71 M CHF
Start of construction	July 2023
Completion	March 2027
Building owner	Bundesamt für Strassen ASTRA
Construction management	IG Gubrist 1+2; Gähler und Partner AG; Rothpletz, Lienhard + Cie AG; Pini Group SA

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Construction management	IG Gubrist 1+2; Gähler und Partner AG; Rothpletz, Lienhard + Cie AG; Pini Group SA

SERVICES

- Tunnelling
- Special Foundations
- Road construction
- Concrete construction

https://implenia.com/en/references/detail/ref/n0138-ausbau-nordumfahrung-zuerich-los-3-instandsetzung-gubristtunnel-1-und-2-roehre/

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